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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/531,225

04/13/2005

Helmut Winterling

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4572

30678

7590

07/31/2007

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EXAMINER

LISTVOYB, GREGORY

ART UNIT

PAPER NUMBER

1711

MAIL DATE

DELIVERY MODE

07/31/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/531,225

Applicant(s)

WINTERLING ET AL.

Examiner

Gregory Listvoyb

Art Unit

1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) 1-3 and 5-18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

***Claim Rejections - 35 USC § 103***

Claim 1, 2, 5-11, 13-14 and 16-17 rejected under 35 U.S.C. 103(a) as being unpatentable over Brubaker (US patent 2264298) in combination with Sato et al (US Patent 4963639) ( All the above references were cited in the previous Office Action mailed on 1/31/2007).

Brubaker teaches a fiber forming hydroxyl terminated polyamide, comprising a caprolactam (see Example 3). The fiber above produced by extrusion molding process (Page 1, line 20). Brubaker discloses that terminal hydroxyls increase fiber affinity to a pigment.

Brubaker teaches that his polyamide contains 0.002 % mol of hydroxyl group based on 1 mol amide group (see Example 3).

Brubaker does not teach that his polyamide has a terminal group, which based on Alkanecarboxylic acid

Sato discloses polyamide polyols, which can be can be synthesized by reacting a polyamide with a hydroxyl-containing carboxylic acid (Column 5, line 13).

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In Examiner's position, Hydroxycarboxylic acid is more environmentally friendly, compare to Hydroxylamine. Typically, Nitrogen-containing wastewaters require a special treatment.

Therefore, it would be obvious to a person of ordinary skills in the art at the time the invention was made to replace Hydroxylamine to Hydroxycarboxylic acid in Brubaker's process in order to make more environmentally friendly process.

Regarding claim 8, Sato discloses a film, based on the polyamide of the above structure (Abstract). In examiner's position, since polyimide with hydroxyl -terminated polyimide has a good affinity to dyes and polyimide itself is a transparent material, it can be used in colored films (i.e. light filters).

Therefore, it would be obvious to a person of ordinary skills in the art at the time the invention was made to make film from Brubaker's polymer, modified by Sato, especially in color filters, since the above polyimide has great affinity to dyes and transparency.

Claims 1-3, 5-7, 9-18 rejected under 35 U.S.C. 103(a) as being unpatentable over Brubaker in combination with Glazko et al (Deamination... Russian Journal of Applied Chemistry. Vol 74, N9, 2001, p.1513-1516) herein Glazko.

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Brubaker teaches a hydroxyl terminated polyamide, comprising a caprolactam (see Example 3), which contains 0.002 % mol of hydroxyl group based on 1 mol amide group (see Example 3).

Brubaker does not teach that his polyamide has terminal groups based on Hydroxycaproic acid.

Glazko discloses (see page 1515) that Hydroxycaproic acid can be easily obtained from Caprolactam, which is a starting material for Brubaker's synthesis. In Examiner's position, it makes the process more economical, since it eliminates the need to purchase Hydroxycaproic acid.

Therefore, it would have been obvious to a person of ordinary skills in the art at the time the invention was made to use Hydroxycaproic acid in Brubaker's process to obtain economically sound process.

### ***Response to Arguments***

Applicant's arguments, see Correspondence from 4/30/07, with respect to Melchior, Shinomura and Marrion references have been fully considered and are persuasive. The above references have been withdrawn.

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Regarding Brubaker's reference, the Examiner disagrees that it fails to meet the limitation of 0.001 to 2% mol hydroxyl groups based on 1 mol amide group (see discussion above).

In reference to the argument that Brubaker does not teach end capping a polycaprolactam with Alkanecarboxylic acid, based on the synthesis, the polymer has both acidic and amino terminal groups in the ratio 1:1. Therefore, it is technically easy to replace Hydroxyl amine to Alkanecarboxylic acid in the Brubaker's synthesis. The obviousness analysis is given above.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory Listvoyb whose telephone number is (571) 272-6105. The examiner can normally be reached on 9am-6pm.

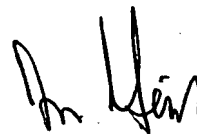
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Gregory Listvoyb  
Examiner  
Art Unit 1711

GL  
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James J. Seidleck  
Supervisory Patent Examiner  
Technology Center 1700